UNION CARBIDE

NUCLEAR DIVISION NEWS

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 6, No. 18 September 18, 1975

QUESTION BOX ??

If you have questions on company policy, write the Editor, Nuclear Division News *(or telephone your question in, either to the Editor, or to your plant contact). Space limitations may require some editing, but pertinent subject matter will not be omitted. Your name will not be used, and you will be given a personal answer if you so desire.*

QUESTION: The question concerning foul language prompts this question. I don't have that problem. My supervisor just won't speak at all. Many days go by without any communication between him and those of us working for him. He has been to the Company-sponsored human relations course. What can we do?

ANSWER: Since you did not identify yourself and gave only the information above, it is difficult to offer any good advice. Supervisors are, after all, like other people. Some are more communicative than others. We encourage supervisors to communicate adequately to assure good performance of the work they are directing.

QUESTION: What life insurance coverage does an employee have while on official travel status for Carbide? (Not including his/her group insurance coverage which we all know about.) Does the Company reimburse the employee for supplemental insurance purchased at the time of travel?

ANSWER: Most business trips requiring significant time and travel away from a person's home base involve monthly salaried employees. Accordingly, there is a blanket commercial travel accident insurance policy covering these employees. The amount of coverage varies and an exempt employee can get this and other details from the travel office at the time of authorized travel. The Company does not reimburse a monthly salaried employee for additional insurance he might purchase. Weekly salaried employees who make business trips are reimbursed for premiums they pay for up to $50,000 coverage for airlines trip insurance.

QUESTION: I think piped-in music is a very good idea in the plants, giving us that "whistle while you work" attitude. However, why shouldn't we have a greater variety of music, news, weather, etc., instead of the dull stuff we get routinely day in and day out. Why not have a survey seeing what employees would like to hear. If the system change is too expensive, I for one, would be willing to chip in to help defray the additional expenses. I realize that people all have different tastes, but feel that the present system needs reevaluation.

ANSWER: The music is programmed to provide an 'easy listening' background to facilitate the performance of work by those listening and is not for entertainment. Authorities in the field of selecting the material used for this purpose agree that it would not be practical to use current news, weather information, or entertainment-type music. Frequent studies are made to determine the availability of a wider variety of suitable tapes, and this practice will continue.

QUESTION: I know of two recent cases where persons have been hired almost immediately after receipt of their clearances. However, I also know of a person who has had his clearance since January and still hasn't been placed on the payroll. How do things like this happen?

ANSWER: Security clearances are requested on applicants who possess qualifications pertinent to current or anticipated openings that cannot be filled from within. Actual employment occurs as needed. For example, clearances may be requested for 10 electricians and 10 stenographers. It could be that the electricians are needed as soon as possible, whereas the openings for stenographers may be anticipated over several months.

If the applicants in your question were being considered for the same type work, the selection sequence would normally have been based upon the most favorable total assessment for the current job opening.

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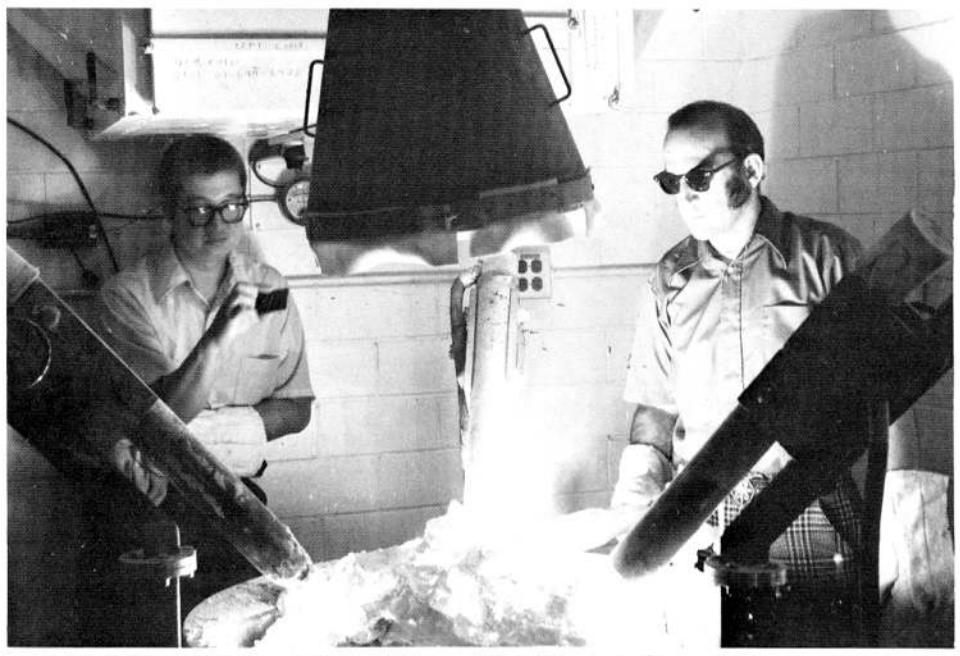


ARC FURNACE IN OPERATION — Yok Chen (left) and Marvin Abraham observe the arc furnace which enabled them to grow clear alkaline-earth oxide crystals.

ORNL's Chen, Abraham earn award for crystal research

Two Oak Ridge National Laboratory scientists have been selected by Industrial Research magazine to receive a 1975 "IR-100 Award" for one of the 100 most significant new technical products of the year.

The award recipients are Yok Chen and Marvin M. Abraham, both research physicists in ORNL's Solid State Division. They will be honored for development of a technique for growing large, totally transparent crystals of three alkaline earth oxides — magnesium oxide, calcium oxide and strontium oxide.

The new clear crystals are superior in their electrical, optical and mechanical properties to crystals available previously. By incorporating small amounts of other elements, the properties of the crystals can be altered to make them potentially useful for various industrial applications.

Impact cited

Chen and Abraham believe their new process should have an important future impact in such areas as photochromic devices, chemical lasers, information storage and display, infrared components and quantum electronic technology.

Specimens of the award-winning crystals, and a description of how they are produced, will be the subject of a Union Carbide exhibit on display during the next month at the Museum of Science and Industry in Chicago.

Previously, the best available laboratory-grown crystals have been translucent or partly transparent, rather than clear, due to the voids (microbubbles) that remain after the crystals are grown at temperatures of a few thousand degrees in an electric arc furnace.

Time-temperature needs

The Oak Ridge discovery produces totally clear crystals through a variation in the arc-fusion process. The key to the technique is maintaining the crystals near their respective melting temperatures for a sufficiently long time to provide an opportunity for the tiny bubbles to diffuse to the crystal surfaces.

Chen and Abraham began to grow crystals about five years ago when they were unable to find commercial sources that could meet the exacting requirements of their research.

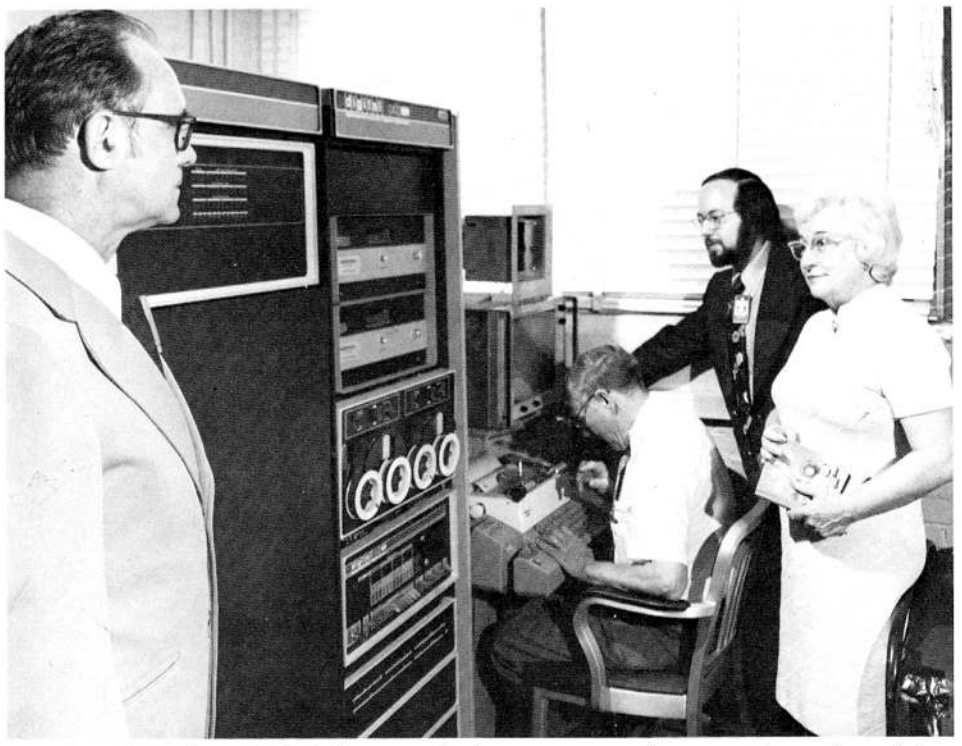
The physicists' crystal-growing apparatus is a water-cooled stainless-steel vat containing three graphite electrode assemblies. The vat is filled with a powder of the desired oxide compound which surrounds the electrodes. An electric arc is then produced between the electrodes to produce the necessary high temperatures. The melting points of these alkaline-earth oxides range from about 4900° to 5600° F. Critical temperature control is accomplished by adjusting the electrical power and by varying the distance between the electrodes.

Crystal number varies

Crystals are produced as part of a boule, a roughly pear-shaped mass containing both fused and unfused material. A boule is typically 12 to 18 inches in diameter and weighs about 40 pounds. The number of individual crystals in any one boule varies greatly.

Chen earned his bachelor's degree from the University of Wisconsin and his Ph.D. degree in physics from

(Continued on page 8)



BCTIC STAFF — P. R. Bell, seated, demonstrates the operation of a minicomputer similar to the ones that will be used in the new Biomedical and Computing Technology Information Center at ORNL. BCTIC staff includes, from left, William J. McClain and Ronald L. Henne, Computer Sciences, and Betty F. Maskewitz, Neutron Physics Division. Bell, ORNL's Biology Division, is a member of BCTIC's advisory committee.

New technology information center established at ORNL

Five years of collaborative effort by staff members in several divisions at ORNL, the Society of Nuclear Medicine, and other practitioners in the fields of medicine and computer sciences has resulted in the establishment of a new national technology resource at ORNL. The Biomedical and Computing Technology Information Center (BCTIC), has as its mission collecting, organizing, evaluating and disseminating information in computing technology pertinent to biomedicine in general and nuclear medicine in particular.

The Center is sponsored by the ERDA's Division of Biomedical and Environmental Research, the Bureau of Radiological Health of the Department of Health, Education and Welfare's Federal Drug Administration, the Society of Nuclear Medicine and the Society for Computer Medicine.

The Center will serve as a mechanism for the exchange of information and services among research and medical groups involved in the use of computer technology. It will provide media for collaboration among members of the user community, and will focus attention on outstanding problems of mutual concern. BCTIC will seek to advance the technology by serving as a clearinghouse to implement improvements, extensions and corrections made by the user community through what is known as the "open code/date concept." The Center will also provide training in the implementation of specialized computer software and hardware interface design.

Betty F. Maskewitz, Neutron Physics Division, will serve as director of BCTIC. Sharing responsibility for the development and operation of the new Center are William J. McClain and Ronald L. Henne, both of the Computer Sciences Division. The Center will be located in Building 6025.

A scientific advisory committee, which will assist BCTIC by providing expertise in various related areas, has been formulated. Committee members are: J. A. Auxier, Health Physics, ORNL; P. R. Bell, ORNL Biology Division; N. A. Betz, Computer Sciences; Dr. A. B. Brill, Vanderbilt University; J. G. Carlson, Radiological Physics at Hackley Hospital, Muskegon, Mich.; R. J. Cloutier, Oak Ridge Associated Universities; Dr. M. A. Jenkin, Society for Computer Medicine; J. W. Poston, ORNL Health Physics Division; C. E. Price, Computer Sciences; S. S. Stevens, Biology Division; and Dr. H. N. Wagner Jr., Johns Hopkins Medical Institutions. Auxier will serve as chairman of the committee.

Additional information concerning the Biomedical and Computing Technology Information Center can be obtained by writing to the Center at ORNL, or calling extension 3-0293.

NUCLEAR DIVISION NEWS

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UNION CARBIDE CORPORATION
NUCLEAR DIVISION

James A. Young, Editor
Accredited Business Communicator
Ext. 3-7100
Ruby Miller, Assoc. Editor
Ext. 3-6421
Keith Bryant, Paducah
Bell 369
Doug Carter, ORGDP
Ext. 3-3434

—Member—
INTERNATIONAL ASSOCIATION OF
BUSINESS COMMUNICATORS

Office
Post Office Box Y
Oak Ridge, Tenn. 37830

Research houses will involve energy studies in Knoxville

Oak Ridge National Laboratory, together with the Energy Research and Development Administration, The University of Tennessee and the Tennessee Valley Authority will participate in a cooperative research and demonstration project involving two separate energy-savings systems designed for use in homes and buildings.

The project, expected to continue for a number of years, will consist initially of the construction and testing of two experimental houses with identical floor plans, each of which will be equipped with a different energy system for space heating and cooling.

Uses weather cycle

One house will use a solar energy system designed and developed at the University which will be funded by TVA. The other house will use an Annual Cycle Energy System (ACES) under development at ORNL. ACES is so named because it makes use of the natural weather cycle to hold to a minimum the amount of energy expended in a residential or commercial building for heating and cooling.

The two homes will be constructed on UT property on Alcoa Highway between Knoxville and McGhee Tyson Airport.

The demonstration project, to be known as the Tennessee Energy Conservation in Housing (TECH) program, will be coordinated among the participating organizations by UT's Environment Center.

Conventional homes

A key element of the project will be the dissemination of experimental data to a broad segment of the nation's architect-engineers, developers and industry representatives to determine commercial feasibility and application of the two systems.

The two homes will be of conventional, single family, three-bedroom design containing approximately 1,500 square feet of space. Both will be fully insulated for maximum energy conservation. They will be furnished to simulate actual living conditions and each will be heavily instrumented for data acquisition.

The solar house will be equipped with a solar heating and cooling system utilizing roof-mounted collectors to capture energy from the sun. A closed water system with a 2,400-gallon storage tank will provide energy storage during cloudy days. The architectural design will help minimize heat loss during winter and will keep cooling requirements at a minimum in summer. Interior furnishings and appliances will be tested for their contribution to energy conservation. Exterior landscaping will be developed to provide summer shade when it helps, but also to use winter sun.

ORNL began a study of ACES early this year. The Laboratory has constructed and operated a small model of this energy system which is about one-eighth the size of the system planned for the demonstration project.

The principal component of ACES is an insulated tank of water which serves as an energy storage bin. The size of the tank of water required would vary according to the size of the house. The tank could be located in the basement or could be built under a driveway, carport or patio of a home under construction. The tank for the demonstration house will measure 16 feet by 21 feet by eight feet deep and be located under the floor.

Heat to warm the house and heat water is obtained from the bin during the winter by drawing it from the water, in much the same manner that the conventional home heat pump draws heat from the air. This removal of heat from the water gradually turns the water into ice over the winter months. In the summer months, chilled water from the ice bin is used to provide air conditioning without the operation of the heat pump compressor. This action causes a gradual melting of the ice and thus stores heat for use in the winter. Developers of the system believe it can save more than 50 percent of the energy now used for space heating and cooling and hot water.

Information shared

Over much of the United States, there is a good balance between the heat required to provide hot water all year around and warm air to residences in winter, and the cooling required to air condition them in summer. The geographic band of the U. S. between Atlanta, Ga. and Minneapolis, Minn. appears to have the temperature range required for optimum operation of the ACES system.

Although no Annual Cycle Energy Systems are available for purchase at present, information is being shared with commercial manufacturers interested in making such equipment. The first in a series of industrial workshops is planned in late October to provide architects, heating and refrigeration engineers, manufacturers, builders, government agencies and mortgage bankers with data on which they can base future building plans.

Auto mishap claims Paducah's Van Orden

Wesley Van Orden, a laboratory analyst in the Paducah Plant's Laboratory Division, died August 16, as a result of an automobile accident.

Mr. Van Orden

A native of Portland, Ore., he had lived in Smithland and more recently on Washington Street, Paducah.

Mr. Van Orden joined Union Carbide in 1951 after working with the International Shoe Company.

Survivors include his wife, Margie Van Orden, and son, Richard Berry.

Funeral services were conducted in the chapel of the Smith Funeral Home, Smithland, Ky.

75-5578

Firewood cutting set for September 25 and 26

Nuclear Division employees, their families and friends are invited to take advantage of another firewood cutting to be held on the Oak Ridge reservation on Friday and Saturday, September 26 and 27.

Cutting will be by permit only, and only in designated areas. There will be a $5 permit fee for each individual or family to defray costs of personnel needed to monitor the activity. Permits will be good for the day of issuance only.

The firewood cutting will be administered by the Nuclear Division's Forest Management Program, under the supervision of Dennis Bradburn, ORNL's Environmental Sciences Division. According to Bradburn, the cutting will be behind logging operations, and will include lots of good hardwood tree tops.

Persons interested in participating in the activities should meet at the intersection of the Oak Ridge Turnpike and Highway 58 between 8 and 9:30 a.m. on September 26 or 27. Members of the forest management staff will accompany groups to the cutting areas. Road access will be provided for private vehicles to remove firewood from the reservation after it has been cut. Children under the age of 12 will not be permitted access to the cutting area due to safety regulations.

The purpose of the program is to provide local citizens with an abundant source of firewood for personal use, and is not a commercial activity. For additional information, call Bradburn at extension 3-1266.

PATENT GRANTED

To John J. Henry, Y-12 Plant, for "Ultrasonic-Acoustic Grinding Wheel Setting Station for Automatic Numerically-Controlled Machines."

Ground broken for new environmental sciences laboratory complex at ORNL

Ground was broken for an $8.8 million Environmental Sciences Laboratory at Oak Ridge National Laboratory on September 12. The new laboratory will house the staff and research facilities of ORNL's Environmental Sciences Division, which is ERDA's largest single environmental research unit.

Participating in the groundbreaking ceremonies were Robert C. Seamans, Jr., ERDA Administrator; U.S. Senators Howard H. Baker Jr. and William E. Brock; Congresswoman Marilyn Lloyd; James L. Liverman, ERDA Assistant Administrator; Herman Postma, ORNL Director; Chester R. Richmond, Associate Director for Biomedical and Environmental Sciences, ORNL; and Stanley I. Auerbach, Director of the Environmental Sciences Division.

Posthumous award

The ceremony included the presentation of a special award to the family of the late Daniel J. Nelson, who was an assistant director of the Environmental Sciences Division, and was instrumental in development of the design of the new laboratory building. The auditorium in the new laboratory will be named in his honor.

Construction on the two-building environmental complex is expected to begin in early October and is scheduled for completion in the fall of 1977. The laboratory will be located at the west end of ORNL, between the Aquatic Ecology Laboratory and the Engineering Building.

88,000 square feet

The principal facility of the complex is a three-story laboratory and office building containing approximately 88,000 square feet of space. The building has been designed to incorporate a number of energy-saving features which are expected to reduce annual energy consumption for heating, cooling and lighting by some 60 percent when compared to a similar building of conventional design and construction.

More than half of the laboratory building (approximately 56,800 square feet) will be a laboratory area with the remaining 31,000 square feet devoted to administrative space and service areas. The building will also feature a 150-seat auditorium, smaller conference rooms, a research library and computer terminal operations center.

Considerable reduction in annual energy consumption will be achieved in the new building by a combination of design, construction and equipment modifications, including the use of more insulation in walls and roof areas, reduction in the amount of window glass area, reduced lighting intensity, night shutdown of some energy consuming equipment and recycling of discharged heat from exhaust stacks.

Connected by walkway to the main laboratory building will be a 14,600 square foot Controlled Environment and Animal Building. The annex will feature a 2,800 square foot chamber in which varying environmental conditions can be simulated and controlled. The buildings will also have a facility for raising and studying insects, greenhouses and animal rooms.

POSTHUMOUS CITATIONS — Herman Postma (left), ORNL Director, made one of two presentations to Samuel Nelson in honor of his brother, the late Daniel J. Nelson, at groundbreaking for the Environmental Sciences Laboratory. The plaque presented by Postma was in recognition of Mr. Nelson's contributions to the goals and achievements of the Environmental Sciences Division, including his efforts in the design of the new facility. The auditorium in the new laboratory will be named in Mr. Nelson's honor. A framed letter of recognition from ERDA was also presented to the Nelson family by James Liverman, ERDA Assistant Administrator.

GROUNDBREAKERS — Floyd Culler (far left), ORNL Deputy Director, looks on as ground is broken for the Environmental Sciences Laboratory complex. From left are Herman Postma, ORNL Director; Chester Richmond, ORNL Associate Director; U. S. Senator Howard Baker; Stanley Auerbach, Director of ORNL's Environmental Sciences Division; U. S. Representative Marilyn Lloyd; U. S. Senator William Brock; Robert Seamans, ERDA Administrator; and James Liverman, ERDA Assistant Administrator.

C. E. Barber

P. O. Fox

D. B. Long

J. F. Vettori

New assignments made in ORGDP promotions

Four men have been promoted to foremen at the Oak Ridge Gaseous Diffusion Plant.

Charles E. Barber is a maintenance foreman in the Fabrication and Maintenance Division. A native of Coalfield, he joined Union Carbide eight years ago, after working for Hayes Aircraft Corporation. He lives in Coalfield and has two children.

Paul O. Fox is a new garage foreman in F & M. A native of Sevier County, he came to ORGDP in 1972, and prior to that was with the Plant and Equipment Division at ORNL. He has a son, and lives on Morgan Street in Oliver Springs.

Donald B. Long has been promoted to a machining foreman in F & M. A native of Clinton, he has been at ORGDP 10 years. Prior to that he worked at Magnet Mills, Readex Microprint Corporation, and was a production machinist at the Y-12 Plant. He lives at Route 5, Clinton, with his wife, the former Naomi Phillips. They have four children.

John F. Vettori has also been named a maintenance foreman in F&M. He worked at Plastiline and Standard Knitting Mills before coming to ORGDP more than six years ago. He is married to the former Kathrine Holt, and they live at 3420 Harver Road, Knoxville. They have a daughter.

PATENTS Granted

To Ed D. Hudson and Merrit L. Mallory, both of ORNL, for "Means of Obtaining a Metal Ion Beam from a Heavy-Ion Cyclotron Source."

To Arvid E. Pasto, ORNL, for "Method of Forming High Density Oxide Pellets by Hot Pressing at 50°-100°C Above the Cubic to Monoclinic Phase Transformation Temperature."

E. F. Gisbon, Y-12 M-wing shop, dies

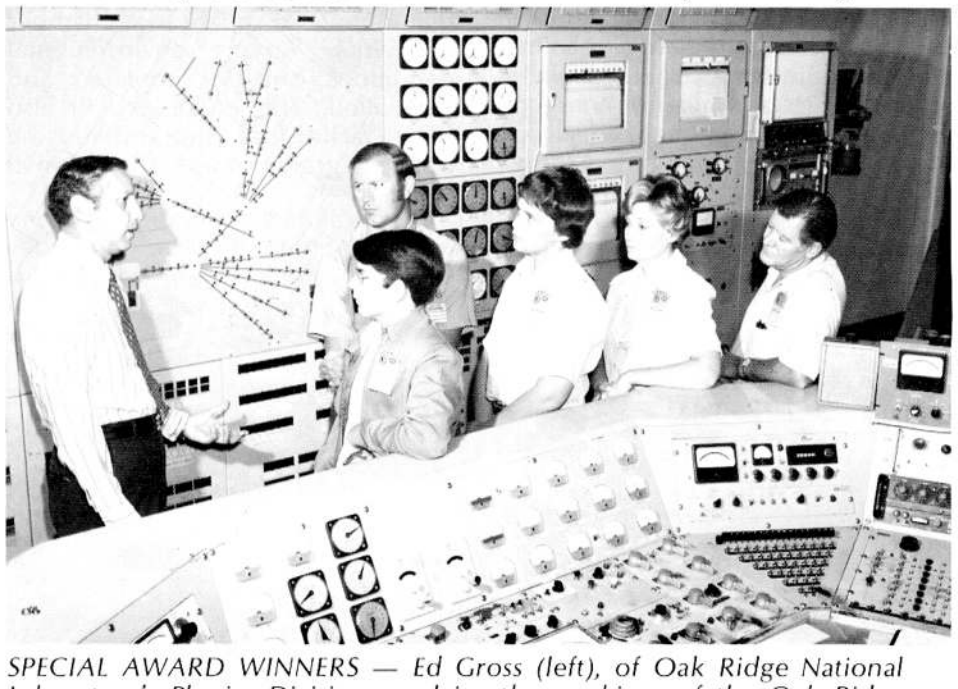
Edward F. Gibson, Y-12 M-wing shop, died August 28 in the Oak Ridge Hospital. A native of North Carolina, he recently completed 20 years of service in Y-12. He was a veteran of the U.S. Army, serving in Germany during World War II.

Mr. Gibson

He lived at 220 West Tyrone Road, Oak Ridge.

Survivors include his mother, Bertha M. Byrd Gibson, Albemarle, N.C.; brothers, Thomas L. and James C. Gibson; and a sister, Mrs. J. D. Hatley.

Funeral services were held at the Grace Baptist Church, Albemarle, with the Rev. Judson Rotan and the Rev. C. R. Hinton officiating. Burial followed in the Prospect Baptist Church Cemetery.



SPECIAL AWARD WINNERS — Ed Gross (left), of Oak Ridge National Laboratory's Physics Division, explains the workings of the Oak Ridge Isochronous Cyclotron control room to two high school students and their instructors who spent an "Energy Research Orientation Week" at ORNL in late August. The boys were recipients of U.S. Energy Research and Development Administration Special Awards in the 26th International Science and Engineering Fair for their outstanding energy-related exhibits. Listening to Gross' discussion are, from left, Robert Stamps, Roy J. Wasson High School, Colorado Springs, Colo., and his chemistry instructor (behind Stamps), Dean Yost; Bradley Burgess, Castleberry High School, Fort Worth, Tex.; his biology teacher, Mrs. Marianne Thompson, and her husband, J. B. Thompson. P. S. Baker of ORNL's Information Division coordinated the week's activities.

Division Retirees

2559-75 2421-75

W. L. DeRieux

J. K. East

Four employees retired from Oak Ridge National Laboratory September 1.

William L. DeRieux, a design engineer with Engineering Division at ORNL, retired after 31 years' company service. DeRieux lives at 112 Victoria Road, Oak Ridge.

Jack K. East took early retirement after nearly 32 years with the Nuclear Division. A research associate in Instrumentation and Controls Division, East resides at 103 W. Malta Road, Oak Ridge.

2422-75

D. L. Clark

L. O. Love

David L. Clark was a senior development specialist in Reactor Division. He joined Union Carbide in December, 1951, and has taken early retirement. He resides at 1313 Murray, Clearwater, Fla.

Leon O. Love has retired from his position as superintendent of the stable isotopes department in Chemical Technology Division. Love joined the Nuclear Division staff in October, 1943. His home is at 119 Tabor Road, Oak Ridge.

75-2361 75-2362

E. V. Bogle

H. C. Spain

Two veteran Oak Ridge Gaseous Diffusion Plant employees will retire next week, as Ernest V. Bogle and Herbert C. Spain end 59 cumulative years company service.

Bogle, in construction engineering, joined Union Carbide in 1947. He lives at 100 Union Road, Oak Ridge.

Spain, who recently celebrated his 30th anniversary with the Company, is in fabrication maintenance. He lives at 312 Shasta Drive, Knoxville.

Charles M. Johnson, communication specialist, retired recently to his 109 Paine Lane, Oak Ridge home. He joined Union Carbide in 1944.

Paducah employee drowns August 21

Richard L. Warner, in the Power, Utility and Chemical Division at the Paducah Gaseous Diffusion Plant, died from drowning August 21.

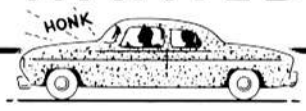
Mr. Warner

Mr. Warner, who recently completed his first year at the Paducah Plant, was a graduate of Reidland High School and an alumnus of Paducah Community College. Before joining Union Carbide, he worked with the *Paducah Sun-Democrat*.

Survivors include his wife, Susan Warner; his mother and father, Mr. and Mrs. James Warner; a sister, Marguerite Russell; two brothers, Keith and James H., an employee at the Paducah Plant.

Funeral services were held at the Grace Episcopal Church in Paducah.

WANTED



ORNL

RIDE or WILL JOIN CAR POOL from West Outer Drive, Louisiana Avenue area, Oak Ridge, to East Portal, 8 to 4:30 shift. Anne St. Clair, home phone Oak Ridge 482-2766, or plant phone 3-0231.

RIDE from West Town Mall, or Papermill Road areas, Knoxville, to South Portal, 8 to 4:30. Sandi Burdick, plant phone 3-6641, home phone Knoxville 584-3680.

A CAR POOL MEMBER from South Knoxville, vicinity of Chapman Highway, to either portal, 8 a.m. shift. I. G. Loop, extension 3-6838; or M. G. Willey, extension 3-6364.

JOIN or FORM CAR POOL from Outer Drive and Woodland area to West Portal, 8 a.m. shift. Joe Kidd, plant phone 3-1665, home phone 483-3785; or Bob Blair, plant phone 3-1911, home phone 483-6254.

PATENTS GRANTED

To Paul E. Reagan, Y-12 Plant, for "Device for Sampling Exhaust Stack Effluent."

To John F. McLaughlin and Stephen S. Cristy, both of the Y-12 Plant, for "Specimen Transfer Container for Ion Microprobe Mass Analyzer."

To Calvin C. Wright, Ralph R. Wright and George S. Petit, Oak Ridge Gaseous Diffusion Plant, for "Electro-Galvanic Gold Plating Process."

To Charles H. Thompson and Fred W. Jones, both of the Y-12 Plant, for "Apparatus for Measuring Tool Path Accuracy."

Alexander, Beal, Homes, Pratt, Word promoted at Paducah plant

Danny L. Alexander, Charles M. Beal and Randall L. Holmes have been named senior inspectors in the Engineering Division at the Paducah Gaseous Diffusion Plant. Clayton G. Pratt has been promoted to a procurement coordinator, and Dewey B. Word has been named a machine shop foreman.

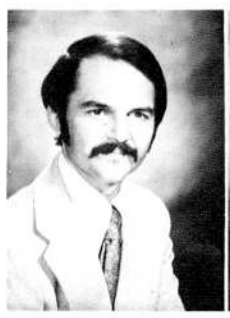
Alexander, a native of Paducah, has been with Union Carbide more than seven years. He served three years in the U. S. Army and worked with the Illinois Central Railroads before coming to the Paducah Plant. He is married to the former Eileen Kay McClure and they live at 2557 Clay Street, Paducah, with their two children.

Beal, who was born in Harrisburg, Ill., has seven years with Union Carbide. He served with the Army and worked with Modine prior to joining the Paducah staff. Married to the former Brenda Kaye Teasley, he lives at 1805 Ferry in Metropolis, Ill. They have two children.

Holmes, a native of Paducah, also worked with the I. C. R. R. before joining Union Carbide seven years ago. Mrs. Holmes is the former Brenda Taylor, and they live at Route 2, Ted Williams Rd., Paducah. They have three children.

Pratt, a native of Buston, Iowa, served in the U. S. Navy during World War II. He has been at the Paducah Plant 24 years, and lives at Olmsted, Ill. His wife is the former Dorothy Kraatz, and they have two daughters.

Word, a native of Paducah, served with the U.S. Army before joining Union Carbide 11 years ago. He is married to the former Becky White, and they live at 3725 Ramona Drive, Paducah, with their three children.



D. L. Alexander

C. M. Beal

R. L. Holmes

C. G. Pratt

D. W. Word

John Arendt to head '75 United Way campaign

75-2526

John W. Arendt, manager of the Uranium Resource Evaluation Project for the Nuclear Division, will coordinate United Way efforts for the three division plants in Oak Ridge for 1975.

Active in civic affairs, Arendt is a member of the Executive Committee of the Anderson County Community Action Council, vice president of the East Region, American Cancer Society; and a member of the State Finance and Budget Committee for the ACS. He is currently president of the board of directors for the Anderson County United Fund.

A registered professional engineer with the State of Tennessee, he is a member of the American National Standards Institute, Inc., the American Management Association, the Institute of Nuclear Materials Management and Task Force Five of the U.S. International Standards Organization.

Born in Fredonia, Wisc., Arendt is a graduate of Marquette University. He joined the University of Chicago in 1943, working on the Manhattan Project, and came with Union Carbide in 1945.

He lives with his wife and two sons at 109 Caldwell Drive, Oak Ridge.

"In the five county area in which we live, a total of $2,384,209 has been set as a realistic goal," Arendt said. "Since in some of these counties, a great bulk of this must come from Union Carbide employees, I am sure we can meet our community responsibilities."

John W. Arendt

Three promotions listed at ORGDP

75-24-15 75-2403

Charles P. Chihasz has been named a staff engineer at the Oak Ridge Gaseous Diffusion Plant's Separation Systems Division. Jerry L. Flood and Donald G. Muldrew have been named foremen in the Fabrication and Maintenance Division.

Chihasz, a native of Loudon, attended Tennessee Wesleyan College and The University of Tennessee. He joined Union Carbide 10 years ago, after working with Yale and Towne. He and his wife, Mary Evelyn, live on Roberson Road, Loudon, with their three children.

Flood, who was born in Dalton, Ga., joined Union Carbide early this year. Prior to coming to ORGDP, he was employed by the Ramada Inn chain. Mrs. Flood is the former Jimmie Conner, and they live at Route 2, Oliver Springs. They have two children.

Muldrew, a native of Clarksburg, W. Va., has been at ORGDP almost two years. He has a B.A. from UT. Mrs. Muldrew is the former Elaine Bearse, and they have one child. They live at 208 Duzane Drive, Concord.

C. P. Chihasz

J. L. Flood

75-2413

D. G. Muldrew

Cate, Y-12 foreman, dies in Knoxville

Cecil W. Cate, a foreman in Y-12 Assembly Division, died August 9 in a Knoxville hospital. A native of Jefferson County, he joined Union Carbide in 1946 at the Oak Ridge Gaseous Diffusion Plant and transferred to Y-12 in 1961.

Mr. Cate

A veteran of the U.S. Army, he served with the Ordnance Corps during the Korean War.

Survivors include his wife, Mary Rice Cate, 7832 Berkshire Drive, Powell; daughters, Gail Landis and Linda Sasser; parents, Mr. and Mrs. John L. Cate; sisters, Margie Fawver and Bonnie Franklin; and brother, Carol W. Cate.

Funeral services were held at the Rose Chapel, with interment at the Sherwood Memorial Gardens.

UNITED WAY

Individually we may not be able to much to solve our community problems. But, by participating in the United Way, both with our talents and our money, we can accomplish a great deal in collaboration with our neighbors.

NUCLEAR DIVISION SAFETY SCOREBOARD

Time worked without a lost time accident through September 10:

Paducah	14 Days	135,000 Man-Hours
ORGDP	129 Days	3,496,000 Man-Hours
Laboratory	157 Days	3,288,635 Man-Hours
Y-12 Plant	84 Days	2,335,000 Man-Hours

COMPANY Service 20 25 30

GENERAL STAFF
20 YEARS

Earl E. Stout.

Y-12 PLANT
30 YEARS

James C. Booher, guard department.

25 YEARS

Charles E. Walker, William P. Moore, David A. Jennings, Fred B. Matthews, Immer J. Maples, Chester L. Johnson, Charlie L. Marlar Jr., Jack D. Barnette, Foraker Lambdin Jr., Wiley A. Herrell, James R. Wells, Nevil F. Bush, Ralph Lawson and James C. England Jr.

20 YEARS

Marie W. Hensley, James E. McNabb, Arlis M. Stephens, Glen W. Ballew, Carroll C. Price, Charles E. Mills and William W. Ivey.

ORGDP
30 YEARS

Robert C. Wood, stores department; Samuel C. Siler, chemical and general field maintenance; Woodrow W. Johnson and Richard C. Stooksbury, TIA barrier manufacturing; Frank Morehouse, grounds maintenance; John D. Kidwell, converter shop; Allen J. White, mechanical services; Clyde M. Cummings and Robert P. Smith, chemical and general field maintenance; Loys S. Goins, shop services; Weldon L. Jones, stores department; J. C. Sexton, TIA barrier manufacturing; Joyce R. Davis, stores department; and John Seeber, shop services.

25 YEARS

Wade H. Adams, Bert M. Timmerman, James E. Brewer, Robert C. Wallace and John H. Boyd Jr.

20 YEARS

Charles H. Pride and Richard D. Hobson.

RECREATIONOTES

FREE BOATING COURSE

A free boating course will be offered again this fall. It begins September 29, 7:30 p.m., at the Oak Ridge High School in Room A-216. The instructions are open to any interested persons and will cover all pertinent boating subjects, including river boating, trailering, seamanship, rules of the road, etc.

Additional information may be obtained from H. S. Corey, Oak Ridge telephone 482-4849, or extension 3-7763.

PHYSICS DIVISION PICNIC

It has been several years since the Physics Division has held an "annual" picnic. Now, thanks to the efforts of several hard-working and spirited secretaries, Clark Center Recreation Park will be the site of the 1975 event on October 4. The Fermion vs. Boson softball game will begin at 2:00 p.m. along with other activities that include volley ball, badminton, and good ol' socializing. A catered barbeque-hamburger dinner will begin at 4:00 p.m. followed by live entertainment into the evening hours. For further details, contact either Anita Barker or Imogene Wilker.

Y-12 BOWLING

The Classic League hit the alleys early, with Jack Spears rolling a 247 scratch, 273 handicap game ... and Bill Sise rolling a 565, 640 series! The Ridgers put the only sweep on the boards with a decisive win over the Rippers.

The Rollers are on top of the Y-12 Mixed League after two weeks of rolling, with 6 wins, 2 losses. Emily Hester showed bowlers a thing or two by rolling a 206 scratch game.

ORGDP BOWLING

The Wednesday League hit the hardwood, with the Planners and Losers taking sweeping wins from opponents in opening play. High game was rolled by C. F. Hale, a rocking 245 ... as John Peer rolled a 617 series.

The Tuesday League put the Newcomers on top at the beginning of the season. Sewell Brown rolled a 575 scratch series; J. D. Bowers put a 654 handicap total on the boards. Brown's 225 scratch game was high for opening night.

The ORGDP Women's League saw Marilyn Canterbury star for the night with a 598 handicap series. The Wood Bees took a big win from the Spotters. Helen Hobson rolled a 203 scratch game!

CARBIDE GOLF LEAGUES

The Southwest Point Golf League went to Strunk-Duff, six points out in front of the nearest contenders, Briscoe-Williams.

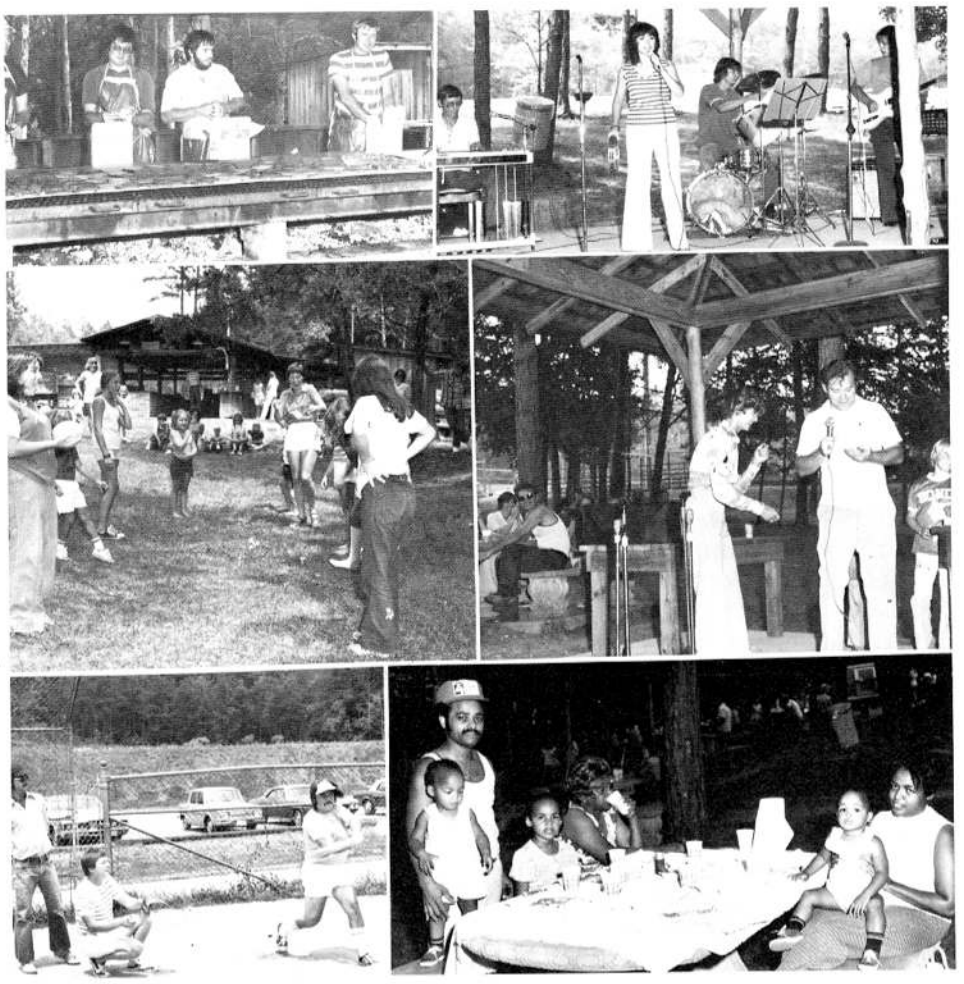
The South Hills League belongs to Davis-Bailey, 10 points away from Pappas-Waldrop.

Carter-Rogers, thanks to a forfeit win over Riggs-Baker, cinched the title in the Melton Hill Golf League, over Mundt-Bailey, by three points.

PARK CLOSING

The Clark Center Recreation Park will close down for the season, Sunday, September 28, as regular services (guards, etc.) will no longer be available. The gates will open daily, however, until 11 p.m. and picnicking will still be in vogue during the fall weather.

Swimming has been prohibited since the removal of lifeguards on Labor Day.



SUMMER FROLIC—The Barrier, Maintenance and Operations Division at the Oak Ridge Gaseous Diffusion Plant recently enjoyed a summer day at the Clark Center Recreation Park. Some of the festivities are seen above.

ORNL BOWLING

The C League opened guns with the Knuckleheads plastering the Pin Heads by a one-sided score. John Van Cleve posted a 621 handicap series for openers. Frank Kocur rolled a high scratch game of 224.

PRESIDENTIAL CITATION AWARDS

John M. Erwels, ORGDP, was recently awarded a Presidential Sports Award for bicycling. Forest L. "Frosty" Miller, ORNL, took one for swimming; and William T. Young Jr., Y-12, was awarded one for softball.

VOLLEYBALL LEAGUE

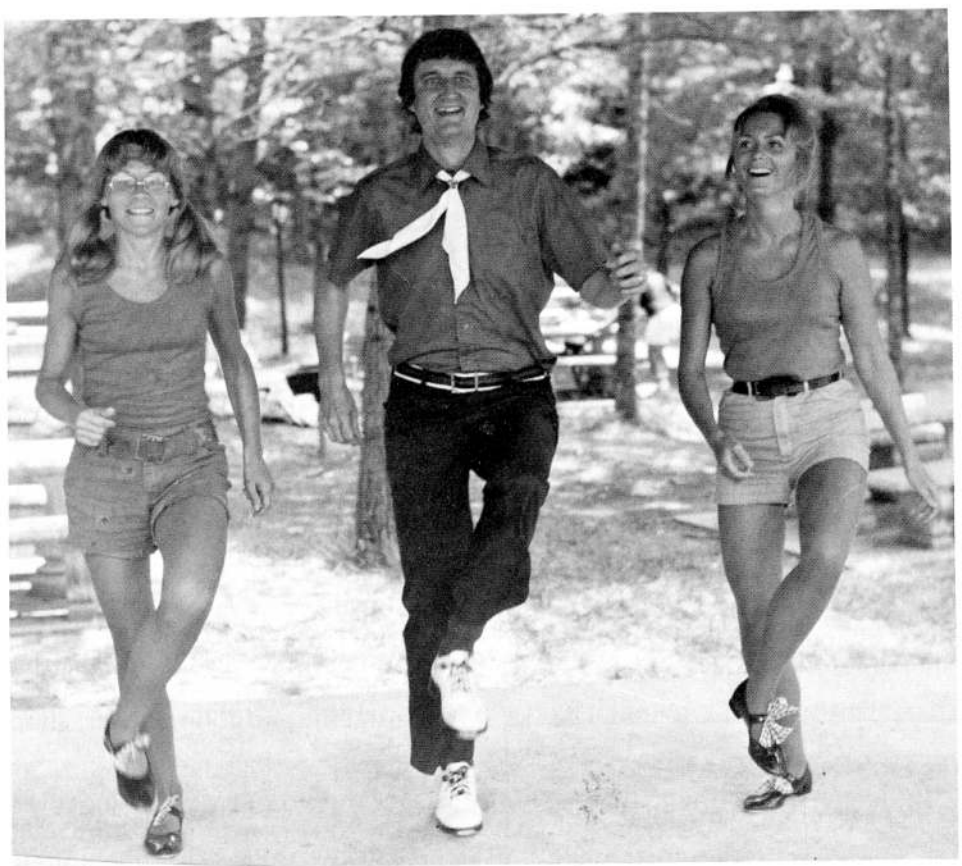
Netmen are being paged for the upcoming Volleyball League to be formed shortly. The deadline for entering is September 26. Mail your team or name to the Recreation Office, Building 9711-5, Stop 1, Y-12, or given them a ring at extension 3-5833.

Next Issue

The next issue will be dated October 2. The deadline is September 24.

Gaseous Diffusion Process

The purposes of the gaseous diffusion plants is large-scale separation of uranium 235 by diffusing uranium hexafluoride (UF_6 gas through porous barriers. These barriers contain holes smaller than two-millionths of an inch and withstand a pressure head of 15 pounds per square inch.



CLOGGING MOUNTAIN STYLE — Kenneth R. Brown, center, Y-12's Product Engineering, enjoys the ancient art of clogging with Skipper Johnson, left, and Barbara Teague. The cloggers recently performed for the Engineering Division picnic at the Clark Center Recreation Park. The group took honors in a folk festival recently in Smithfield.

ORGDP 1975 BARBECUE — HOOTENANNY

There will be special activities at the Barbecue-Hootenanny, Saturday, September 27, for ORGDP retirees. Everyone is looking forward to seeing the old-timers at the big annual event. Retirees may obtain tickets through the Recreation Office, extension 3-5833, or buy them at the entrance to Clark Center Recreation Park the day of the big fete.

Active employees may obtain tickets from the following:

Division	Representative	Extension
Barrier	Sherry Clark	3-3221
Operations	John Patrick	3-3325
Fabrication & Maintenance	Louis Alley	3-3136
Industrial Relations	Angie Fincher	3-3211
Finance & Material Serices	Bob Seyfried	3-3155
	Kat Terry	3-3396
Environmental Management	Dode S. Gordon	3-3647
Security & Plant Protection	Tony Heitzman	3-3845
Separation Systems	Andy Fadnek	3-3736
General Accounting	Norman Sparks	3-9671
Laboratory	Joyce Ferguson	3-3264
Development	Tony Angelelli	3-3498
Engineering	Gary Calvert	3-3258
Auditing	Sam Gaines	3-4693
Purchasing	Opal Waller	3-4264
Computing Technology	N. David Byrd	3-3036
Recreation (For Retirees)	E. W. Whitfield	3-5833

Tickets are $2.50 for adults, $1 for children, and include the price of the slow-cooked barbecue that is the hit of the party.

Make your plans now, and get an advanced ticket, if possible ... it will give planners some idea of how many are coming.

The Medicine Chest

(Editor's Note: Dr. Lincoln alternates his regular column with "The Medicine Chest," where he answers questions from employees concerning health in general. Questions are handled in strict confidence, as they are handled in our Question Box. Just address your question to "Medicine Chest," NUCLEAR DIVISION NEWS, Building 9704-2, Stop 20, Y-12, or call the news editor in your plant, and give him your question on the telephone.)

By T. A. Lincoln, M.D.

QUESTION: "My daughter plays and goes to school with a little girl who is continuously coughing and has colds. She has cystic fibrosis, which I am told is a dangerous disease. Is cystic fibrosis contagious, and should I discourage their contact? I'd like to know more about this disease."

ANSWER: Cystic fibrosis is a genetically determined disease and is not contagious. The disease usually appears in childhood and causes progressive damage to the lungs and pancreas. Like juvenile diabetes, the inherited defect is probably not a single entity but a group of closely related disorders. Those who have the full spectrum of defects suffer progressive damage to mucous glands in the lungs and the glands in the gastrointestinal tract, particularly in the pancreas, which produce various digestive juices. Although it may not cause any symptoms, these patients have an increased amount of salt in their sweat and saliva and this abnormality is the basis for a commonly used diagnostic test.

Lack of enzymes

The mucous glands in the lungs secrete a thick sticky mucus which blocks small bronchial tubes and leads to a severe chronic bronchitis. The lack of pancreatic enzymes prevents proper digestion of fats and if not vigorously treated, leads to a chronic diarrhea and malnutrition.

A few years ago, it was thought that this was always a fatal disease and children with it would survive only a few years. Now, with vigorous treatment, about 70 percent of children survive to become adults. It is now clear that when the genetic defect is mild, the disease may not appear until young adulthood and may manifest itself primarily as chronic lung disease.

Treatment consists of prophylactic antibiotics to control the chronic lung infection and the inhalation of mists and taking various medicines to liquefy the mucus. Pancreatin tablets or powder taken with each meal help replace the deficient pancreatic juices. A high protein but low fat diet with supplemental vitamins helps maintain nutrition.

A recessive trait

The cost of medical and nutritional care of a child with cystic fibrosis is high. The food bill alone is at least double that of a normal child. Unlike juvenile diabetes, where most children can expect to live a relatively normal life, children with cystic fibrosis are severely handicapped and require almost constant medical care. Their long-range future is precarious at best.

Cystic fibrosis occurs primarily in Caucasians and is not rare. It eventually affects approximately one out of every 2,000 white children. Since it is inherited as a recessive trait, *both* father and mother have to carry it. They have no evidence of the disease themselves but approximately one out of four of their children will develop it. Most parents had no idea that they might carry the trait when they got married. Unfortunately, there is no reliable test to determine who is a carrier. Genetic counseling has to be on a probability basis. When there is a known family history, the likelihood that any one person is a carrier is considerably greater than the one chance in 20, which is the average frequency in this country. Fortunately, the Cystic Fibrosis Foundation is trying to help with genetic counseling, care of patients and research.

QUESTION: "How does one become infested with pinworms? Does bedding have to be boiled to avoid reinfestation? What is the cure?

ANSWER: Pinworms are small white or brownish parasitic worms which inhabit the intestines at least sometime in most of the families who have small children. The female migrates out the anus at night and deposits thousands of microscopic eggs on the surrounding skin. These eggs are remarkably tough and can survive in bedding and on clothing for several weeks. They can be transferred in the air when clothing and bedding are shaken. The eggs can frequently be found on the hands of children, especially under their fingernails. Because they cause itching around the anus and children and adults can't resist scratching, their hands get contaminated. Eggs which get into a person's mouth via contaminated hands or even inhalation of egg-bearing house dust mature in about 6 to 7 weeks.

Because of the numerous opportunities for transmission, if one child has the infection, it is likely that the rest of the family also has it. There are four highly effective treatments used. Piperazine salts (Antepar) are good but the medicine has to be given for one week. Pyrvinium pamoate (Povan) is given as a single dose and repeated in two weeks. The drug stains the stools red. Pyrantil pamoate (Antiminth, Combantrin) is also given as a single dose and repeated in two weeks. Mebendazole (Vermox) is given as a single dose and has been reported to be highly effective, although it has only recently been approved for use in this country. In all cases, the whole family has to be treated at the same time. In addition, care in personal cleanliness is important. The fingernails must be cut short and the hands washed carefully before any eating, after defecating, and frequently in general to prevent reinfection. Clothing and bed linen ideally should be boiled although this may not be practical. If the infestation in a family can't be eliminated by the medicine alone, then more strenuous boiling and housecleaning measures may be necessary.

DISTINGUISHED PERFORMANCE — The Reactor Division has been awarded a Union Carbide Distinguished Safety Performance award for 25 years without a lost time accident. Gordon Fee, Division Director, left, shares the plaque with Samuel E. Beall, former Director, and Herman Postma, ORNL Director.

ORNL's Reactor Division marks spotless 25 year safety record

The Reactor Division at the Oak Ridge National Laboratory recently completed 25 years of operation without a lost time accident. The division, with an employment of 190, is physically located in the Y-12 Plant.

In achieving its safety record, the Reactor Division has amassed a total of more than 11,623,800 employee-hours without a lost time accident.

Roger F. Hibbs, Nuclear Division President, termed the division's record "an outstanding example" of a team effort in the field of safety. "The efforts of all personnel in the Reactor Division, working closely with the Y-12 maintenance and safety groups, have been responsible for this excellent safety performance," Hibbs said.

Herman Postma, ORNL Director, told division personnel that plaques and honors are fine, "but the real winners are people who don't get hurt."

A Union Carbide Distinguished Safety Performance Award was presented the division by Postma and Jack M. Case, Y-12 Plant Manager. The presentation was made to Gordon G. Fee, Director of the Reactor Division.

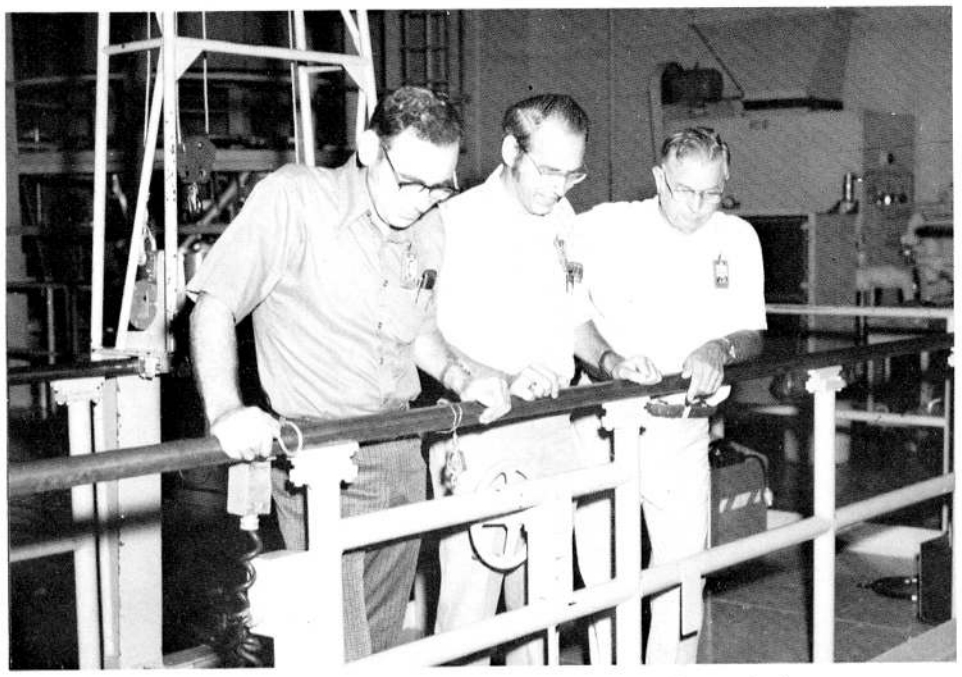
The division is a multi-disciplinary engineering organization that is actively involved in evaluating and developing energy systems for the Energy Research and Development Administration and the Nuclear Regulatory Commission. The work encompasses experimental and analytical activities in the areas of nuclear power plant safety, advanced reactor development and energy conservation. The extensive experimental facilities utilized in this work require routine operations with high pressure, recirculating water, liquid metals such as sodium and potassium and exotic salts.

RIDES-RIDES-RIDES

ORGDP

RIDE from Dixie Lee Junction, Lenoir City, to portals 2 or 4, straight day. Loren Carey, plant phone 3-3258, home phone Lenoir City 986-3152.

RIDE from Karns community, Camelot subdivision, to Portal 4, 8 to 4:30 shift. Jack Hodge, plant phone 3-3136, home phone Knoxville 947-8692.



MISSION COMPLETED–Luther Pugh, left, Gene Hicks and Ed Hutto gaze down at the HFIR reactor vessel with its new beryllium reflector. The reflector was replaced in a three-month operation by HFIR staff. Pugh, Hicks and Hutto designed and tested 216 specialized tools for the replacement operation, which was carried out remotely under 10 to 30 feet of water.

HFIR resumes operation after 3-month shutdown

After the first extended shutdown in its nine years of operation, the High Flux Isotope Reactor (HFIR) resumed operation at full power (100 megawatts) on August 29.

The reactor is the world's most intense source of neutrons and a key facility in the program to produce and conduct research on elements heavier than plutonium. Since its startup in 1966, HFIR has achieved a record of operating reliability unparalleled by either research or power reactors elsewhere in the world. Over the last five years it has been on stream more than 90 percent of the time, and reached a high of 94 percent in 1973.

Shut down June 3

The nearly three-month shutdown that began June 3 was planned to permit replacement of HFIR's beryllium reflector. This eight-inch thick ring surrounding the reactor core, with an outer diameter of 43 inches, helps to sustain the nuclear reaction by reflecting neutrons produced by the fissioning of uranium-235 back into the core, to split other atoms.

The changeout of the beryllium reflector was originally expected to take as long as five to six months. The replacement became necessary when, as anticipated in the reactor's original design, the reflector developed cracks due to the differential swelling of its inner and outer portions produced by different levels of exposure to intense neutron radiation.

James A. Cox, superintendent of the Operations Division, which operates the reactor, attributes the short shutdown time both to thoroughness and foresight in planning for the replacement operation and the absence of any major obstacles during the complex procedure.

The work was carried out by the HFIR staff — including personnel from the Operations and Plant and Equipment divisions — under the direction of R. V. McCord, superintendent of Reactor Operations, and K. H. Poteat, project leader.

216 tools designed

Preparatory work for the shutdown was started in May, 1974, when a task force of three men was formed to design the special tools that would be necessary to perform the removal operation remotely, under 10 to 30 feet of water. Gene Hicks and Luther Pugh, senior engineering draftsmen in Operations, and Ed Hutto, a design engineer from Engineering, joined forces to begin the design work; by the time of actual shutdown, the three-man team had created and tested 216 specialized tools for the job.

In addition, A. A. Abbatiello, a consultant to Operations Division, deisgned an aluminum O-ring needed to replace one of the original beam hole gaskets, which had eroded.

The tools developed by Hicks, Hutto and Pugh ranged from simple grasping and lifting instruments to complex, multipurpose ones, including the reflector lifting device. The longest of the collection was a tool more than 30 feet long, designed to remove the engineering facility water guide sleeves. The tool, which had to reach at an angle to the bottom of the reactor vessel, had to be supported from a crane outside the building. It was then guided inside through an access hatch and penetrated two floors to perform its task. Another tool, used to release the shroud hold-down springs, performed four separate jobs: it clamped onto the base of the shroud, compressed the spring, held a stud and loosened a nut.

Forty to 50 hooks of different sizes and shapes were designed and fabricated. One specially-designed device held an underwater closed-circuit TV camera and allowed it to be maneuvered for optimum visibility of the operation.

Calendar of EVENTS

TECHNICAL

September 21-26

International Conference on Radiation Damage in Metals: Riverside Motor Lodge, Gatlinburg.

September 23

Analytical Chemistry Division Seminar: "A Simple Resin Bead Separations Method for the Simultaneous Isotopic Analysis of Pu and U," R. L. Walker. East Auditorium, 4500N, 1 p.m.

September 29

Lab-Wide Seminar: Peter Fortescue, General Atomic Company, San Diego, Calif. Central Auditorium, 4500N, 3 p.m.

September 30

Environmental Sciences Division Seminar: "Use of Charge Scale Data Banks in Land-Use Decision Systems," Robert H. Giles, Virginia Polytechnic Institute. East Auditorium, 4500N, 10:30 a.m.

September 30-October 3

Symposium on Tritium Technology and CTR Bulk Radiation Damage: Riverside Motor Lodge, Gatlinburg.

Chen, Abraham

(Continued from page 1)

Purdue University in 1965 shortly before he joined the Solid State Division. He is a member of the American Physical Society and the American Ceramic Society. He lives in Oak Ridge with his wife, Alison, and their three children.

Abraham received his bachelor's degree from the City College of New York and his Ph.D. degree in physics in 1958 from the University of California, Berkeley. He was a Fulbright Fellow at the Clarendon Laboratory, Oxford University, England, from 1958 to 1960. He was a member of the staff at Lawrence Radiation Laboratory in Berkeley from 1960 to 1963, except for a six-month period at the Instituto de Fisica, San Carlos de Bariloche, Argentina, where he lectured and conducted research on a fellowship from the International Atomic Energy Agency. He joined ORNL in 1963, and is a Fellow of the American Physical Society and a member of the American Ceramic Society. Abraham, his wife Reeva, and their three children, live in Oak Ridge.

Early signup is urged for secretarial seminar

The Oak Ridge Chapter of the National Secretaries Association will sponsor a seminar, "A Positive Approach to Changing Values," for secretaries and business women on Saturday, Oct. 4. The program will begin at 8 a.m. at the Oak Ridge Holiday Inn. A $12 registration fee includes lunch.

The program will be conducted by members of the NSA's Research and Educational Foundation, including Margaret Dillon and Angeline Kraut, both past international presidents of the NSA. Helen Leonard will discuss the secretary's managerial function, approach to problem solving, semantics and executive team playing. Participants will be involved in role-playing during the program.

A highlight of the seminar will be the presentation of Certified Professional Secretary certificates to 13 Oak Ridge area secretaries, 11 of whom are employed in the Nuclear Division.

Early registration is encouraged, as the number of participants will be limited to 225. Registration forms may be obtained from Bettye Burns at ORNL, 3-1306; Eileen Walbrecht at ORGDP, 3-3321, or Mabel Tyer at Y-12, 3-7122. Bettye Pope is in charge of registration, and Sallie Jansch is the seminar coordinator.

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